

Customer No.: 31561
 Application No.: 10/710,820
 Docket No.: 12419-US-PA

To the Claims:

1. (currently amended) A method of expanding an redundant array of independent disks (RAID), wherein the RAID comprises M number of storage devices, and each of the storage devices comprises N number of storage blocks, wherein M is two or more positive integer number and N is a positive integer, which are defined as:

D_{IJ} : the J^{th} data block of the I^{th} storage device;

P_{IJ} : the J^{th} data block of the I^{th} storage device, being a parity data block;

wherein, I is a positive integer of $1 \sim M$, J is a positive integer of $1 \sim N$, and the arrangement order of the storage devices-parity block is: if $D_{IJXY} = P_{IJXY}$, then $D_{I+J+X-1,Y+1} = P_{I+J+X-1,Y+1}$, wherein X-1 is an integer in the range of $1 \sim M$, and Y+1 is an integer in the range of $1 \sim N$, the method comprising:

providing an expansive storage device;

disposing the expansive storage device in front of the 1^{st} storage devices, wherein the $\forall J^{\text{th}}$ data block of the expansive storage device is represented as $D_{0,\forall J}$; and

sequentially moving the D_{IJ} data blocks except P_{IJ} , wherein I is an integer of $0 \sim M$, $\forall J$ is a positive integer of $1 \sim N$, and if $D_{XY} = P_{XY}$, then $D_{X-1,Y+1} = P_{X-1,Y+1}$, and wherein X is a positive integer of $0 \sim M$ when X-1 is an integer in the range of $0 \sim M$, and Y+1 is an integer in the range of $1 \sim N$.

2. (original) The method of expanding RAID of claim 1, wherein the step of sequentially moving D_{IJ} further comprises sequentially moving D_{IJ} in an ascending order based on the sequence of an I value.

Customer No.: 31561
Application No.: 10/710,820
Docket No.: 12419-US-PA

3. (original)The method of expanding RAID of claim 1, wherein the step of sequentially moving $D_{I,J}$ further comprises sequentially moving $D_{I,J}$ in an ascending order based on the sequence of a J value.

4. (currently amended)A method of expanding an redundant array of independent disks (RAID), wherein the RAID comprises M number of storage devices, and each of the storage devices comprises N number of storage blocks, wherein M is two or more positive integer number and N is a positive integer, which are defined as:

$D_{I,J}$: the J^{th} data block of the I^{th} storage device;

$P_{I,J}$: the J^{th} data block of the I^{th} storage device, being a parity data block;

wherein, I is a positive integer of $1 \sim M$, J is a positive integer of $1 \sim N$, and a same J^{th} data block in the storage devices comprises at least a parity data block, the method comprising:

providing an expansive storage device;

disposing the expansive storage device in front of the 1^{st} storage devices, and the Y^{th} data block of the expansive storage device is represented as $D_{0,Y}$; and

sequentially moving the $D_{I,J}$ data blocks except $P_{I,J}$, wherein Y is a positive integer of $1 \sim N$, and the positions of the parity data block of the same J^{th} data block in the storage devices are the same.

5. (original)The method of expanding RAID of claim 4, wherein the step of sequentially moving $D_{I,J}$ further comprises sequentially moving $D_{I,J}$ in an ascending order based on the sequence of an I value.

Customer No.: 31561
Application No.: 10/710,820
Docket No.: 12419-US-PA

6. (original)The method of expanding RAID of claim 4, wherein the step of sequentially moving $D_{i,j}$ further comprises sequentially moving $D_{i,j}$ in an ascending order based on the sequence of a J value.